

TRACTION POWER DESIGN

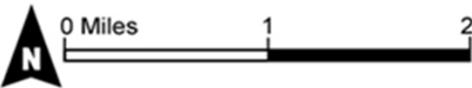
- TP Simulation Study- Simulation runs for South and North Corridor.
- Prefabricated Traction Power Substations furnished by SANDAG:
13 NEW SUBSTATIONS
- Existing Substations(Modifications by Mid-Coast Contract)
Continue working with SANDAG and MTS for modifications and SCADA upgrades to the existing Green Line Substations:
 1. Olive TPSS
 2. Bean TPSS
 3. Congress TPSS

Mid-Coast Corridor Transit Project

- Trolley - Green Line
- Trolley - Blue Line
- Trolley - Orange Line
- +++++ COASTER Line
- Trolley Station
- Transit Center
- COASTER Station
- ▲ TRACTION POWER SUBSTATION

Alignment

- Trolley - Future Blue Line Service on Existing Tracks
- - - Trolley - Future Blue Line Extension At-Grade
- ▬▬▬ Trolley - Future Blue Line Extension - Aerial
- ▬▬▬ Trolley - Future Blue Line Extension - Undercrossing
- Future Trolley Station
- New Park-and-Ride Facility
- Transit Center with a Future Trolley Station



4/30/2015



MID-COAST CORRIDOR TRANSIT PROJECT
LPA ALIGNMENT - STATIONS AND TPSS LOCATION MAP
(MARCH 19, 2015)

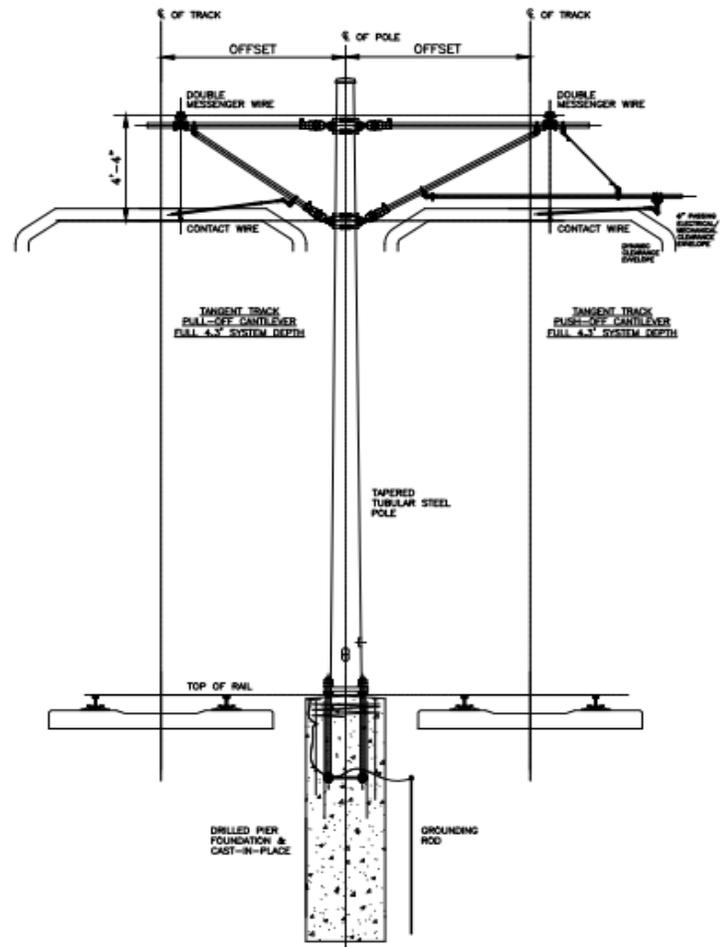


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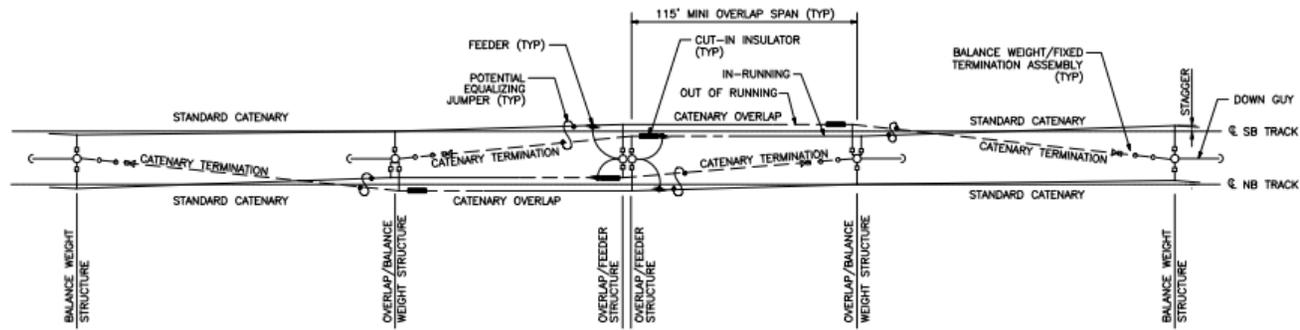
Overhead Contact System – Configuration

- OCS configuration for main line shall be Double Messenger Wire Catenary Auto-Tensioned (DMSCAT) System according to TPSS simulation result
- OCS configuration for crossovers shall be Simple Catenary Auto-Tensioned (SCAT) System
- All OCS system depth shall be 4'-4"
- All OCS poles shall be tapered round poles
- Counterweights for BWA poles are located outside of the termination poles

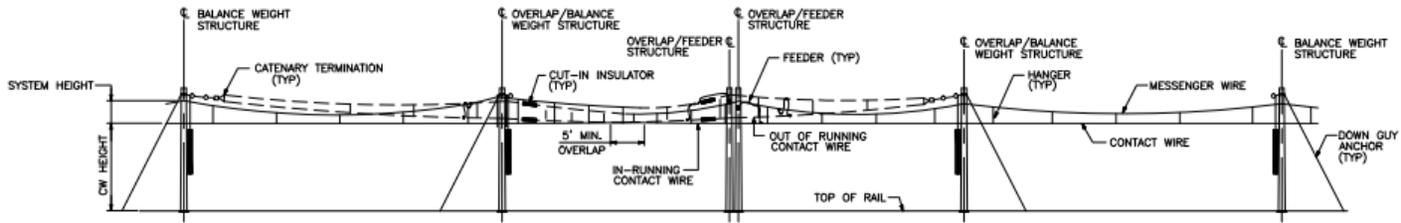
Typical Standard OCS Structure



Typical OCS Overlap Arrangement



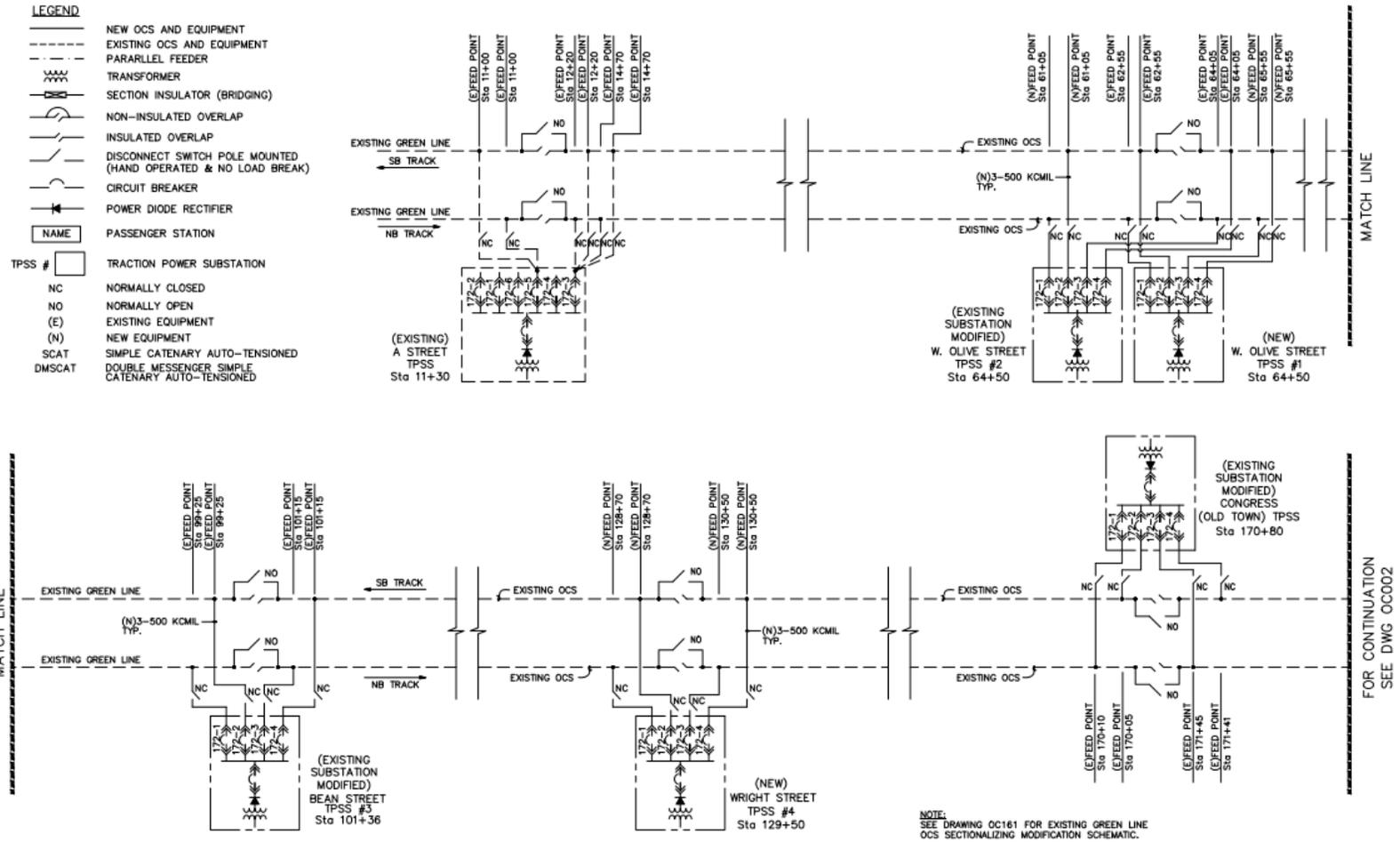
PLAN



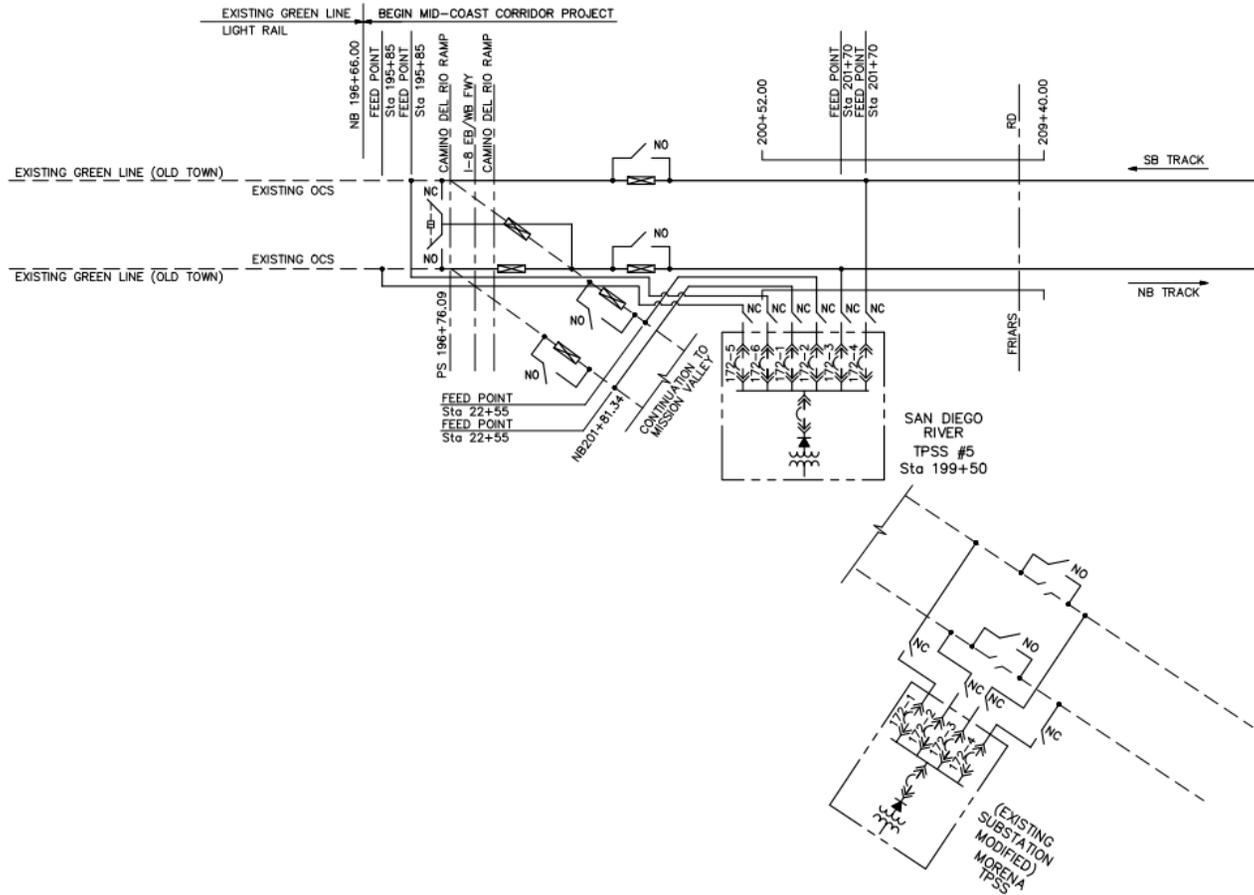
ELEVATION
(ONLY NB TRACK OCS SHOWN FOR CLARITY)

TYPICAL INSULATED CATENARY OVERLAP
CENTER POLES ARRANGEMENT

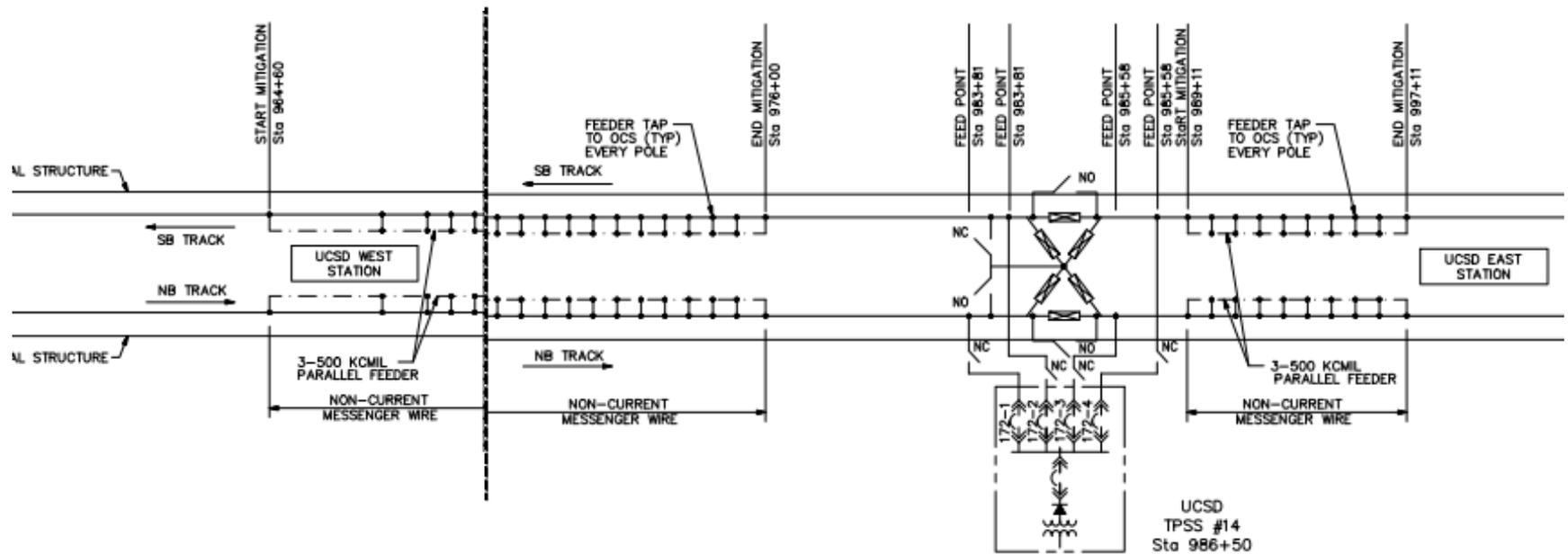
Existing Green Line Sectionalizing Modification



Existing Green line to New Mid-Coast Extension Sectionalization

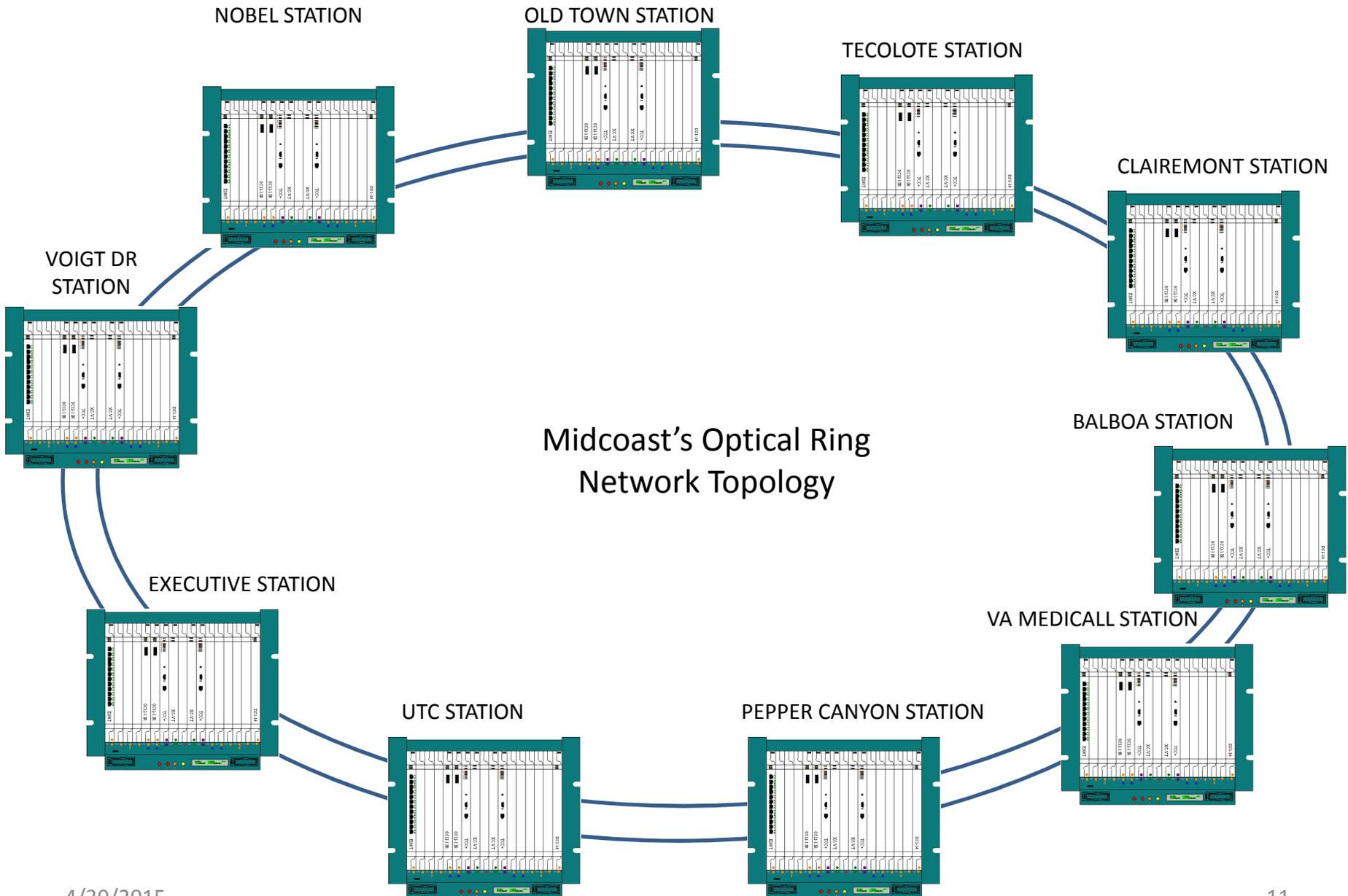


Mitigation Section from UCSD West and UCSD East Passenger Station



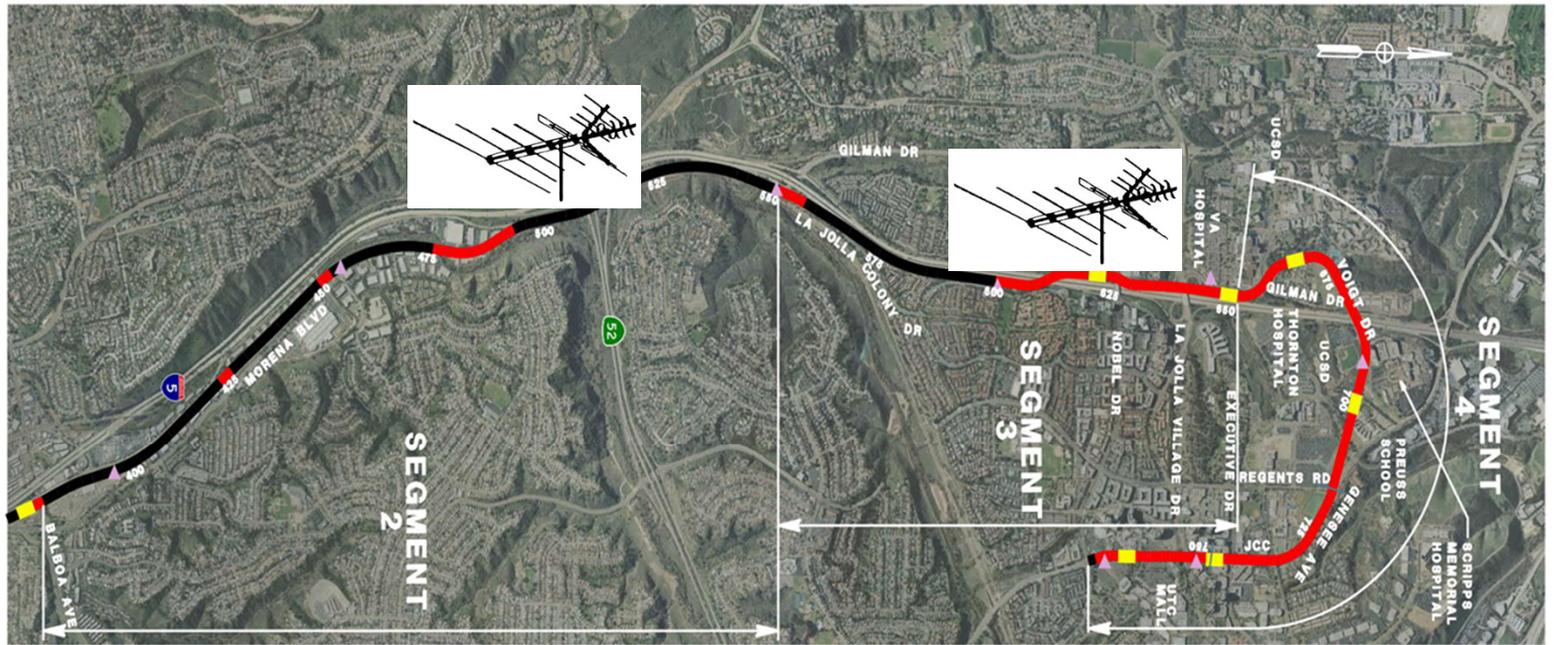
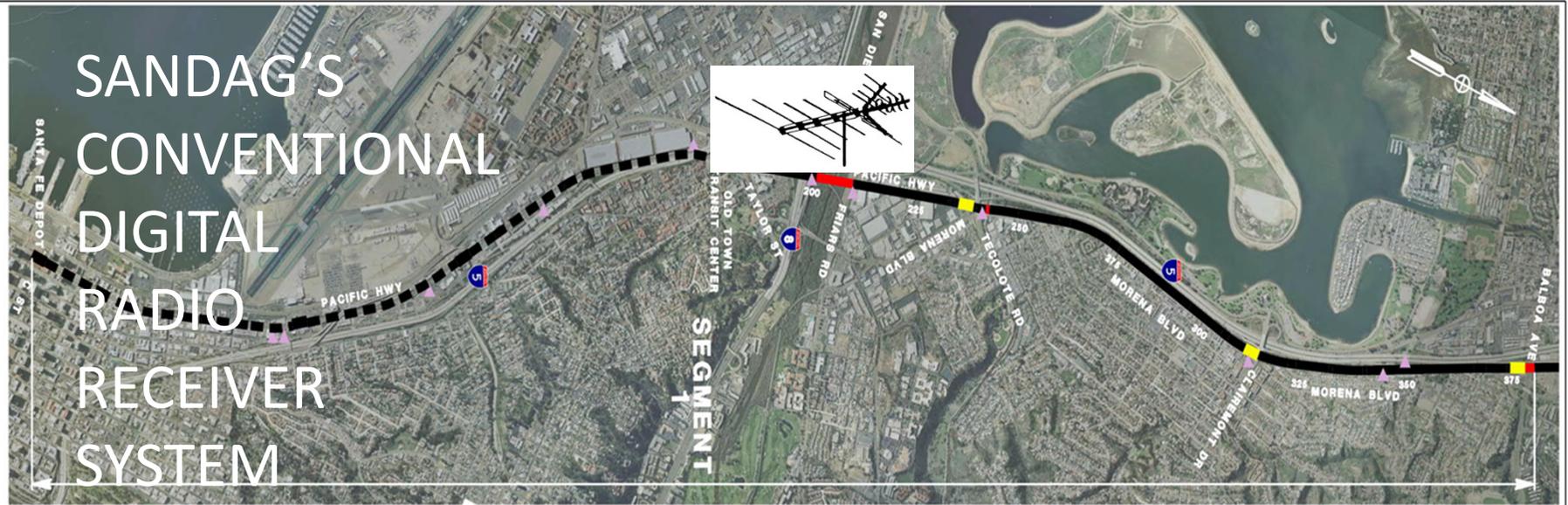
Communications System

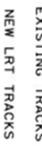
- Communications System includes the following subsystems:
 - Wide Area Network
 - Public Address System
 - Closed Circuit Television System (CCTV)
 - Fire Alarm System
 - Access Control/Intrusion System
 - Radio System
 - UPS System
 - SCADA System
 - Fare Collection interface
 - Wireless CCTV Node for onboard train live streaming
 - Communications Facilities/ Cabinets



Midcoast's Optical Ring Network Topology

SANDAG'S CONVENTIONAL DIGITAL RADIO RECEIVER SYSTEM



 EXISTING TRACKS
 NEW LRT TRACKS





SAN DIEGO ASSOCIATION OF GOVERNMENTS
 MIDCOAST 65% SEGMENT LIMITS
 02-498-2013 08/11 10/13/2015

4/30/2015

MID-COAST CORRIDOR TRANSIT PROJECT

TRAIN CONTROL SYSTEMS

SYSTEM OVERVIEW

- * DESIGN BASED ON FRA DEFINITION OF TRAFFIC CONTROL SYSTEM
- * BI-DIRECTIONAL OPERATION ON BOTH TRACKS
- * ELECTRIFIED ELECTRONIC CODED TRACK CIRCUITS
- * AUDIO FREQUENCY OVERLAY TRACK CIRCUITS
- * VITAL PROGRAMMABLE LOGIC CONTROLLER (PLC)

SYSTEM OVERVIEW

- * TRAIN TO WAYSIDE COMMUNICATIONS (TWC)
- * VITAL & NON-VITAL FIBER NETWORK
- * ROUTE ESTABLISHED BASED ON TRACK OCCUPANCY & TWC LOGIC
- * OPERATIONS CONTROL CENTER – CTC CONTROLS & INDICATIONS
- * APPLICATION LOGIC DEVELOPMENT BASED ON EXISTING SOUTH LINE (BLUE LINE) SYSTEM

OLD TOWN SEGMENT ASH STREET TO TAYLOR STREET

- * EXISTING GREEN LINE SERVICE
- * NEW INSTRUMENT SHELTERS
- * NEW LED SIGNALS
- * VITAL & NON-VITAL FIBER NETWORK ON CATENARY POLES
- * HIGHWAY GRADE CROSSINGS – VITAL PLC & SOLID-STATE CROSSING CONTROLLERS

OLD TOWN SEGMENT ASH STREET TO TAYLOR STREET

- * CROSSING TRAIN DETECTION DESIGNED TO UTILIZE DIRECTIONAL INTERLOCKING LOGIC
- * PSO 4000 CROSSING ASSEMBLIES
- * UPGRADE FLASHING LIGHT SIGNALS WITH GATES
- * UPGRADE LAMPS ON ALL STRUCTURES TO LED
- * NEARSIDE LOGIC AT STATIONS
- * UPGRADE OLD TOWN INTERLOCKINGS

MID-COAST SEGMENT FRIAR JCT. TO UTC

- * NEW INSTRUMENT SHELTERS
- * LED SIGNALS
- * VITAL PLC CONTROL
- * TWC & PUSH-BUTTON ROUTE SELECTORS AT INTERLOCKINGS
- * VITAL & NON-VITAL FIBER NETWORK

REGULATORY REQUIREMENTS

- * TITLE 49 CODE OF FEDERAL REGULATIONS (49CFR)
- * PART 219 CONTROL OF DRUG & ALCOHOL USE
- * PART 228 HOURS OF SERVICE

PERSONNEL QUALIFICATIONS

- * SIGNAL ENGINEERS
- * APPLICATION SOFTWARE ENGINEER(S)
- * SIGNAL SUPERVISOR(S)
- * CONSTRUCTION FOREMAN(S)
- * LEAD WIRE PERSON(S)